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Cardiomyopathy Consequences

Cardiomyopathy, which literally means "heart muscle disease," is the deterioration of the function of the myocardium for any reason. This is a serious disease in which the heart muscle becomes inflamed and doesn't work as well as it should. There may be multiple causes including viral infections. Cardiomyopathy can be classified as primary or secondary. Primary cardiomyopathy can't be attributed to a specific cause, such as high blood pressure, heart valve disease, artery diseases or congenital heart defects. Secondary cardiomyopathy is due to specific causes. It's often associated with diseases involving other organs as well as the heart.

There are three main types of cardiomyopathy: dilated, hypertrophic and restrictive. The first type discussed is dilated or congestive cardiomyopathy, which is also the most common of the three. In it, the heart cavity is enlarged and stretched (cardiac dilation). The heart is weak and doesn't pump normally, and most patients develop heart failure. Abnormal heart rhythms called arrhythmias and disturbances in the heart's electrical conduction also may occur. Blood flows more slowly through an enlarged heart, so blood clots may form. A blood clot that forms in an artery or the heart is called a thrombus. A clot that breaks free circulates in the bloodstream and blocks a small blood vessel is called an embolus.

Clots that stick to the inner lining of the heart are called mural thrombi. If the clot breaks off the right ventricle (pumping chamber), it can be carried into the pulmonary circulation in the lung, forming pulmonary emboli. Blood clots that form in the heart's left side may be dislodged and carried into the body's circulation to form cerebral emboli in the brain, renal emboli in the kidney, peripheral emboli or even coronary artery emboli.

A condition known as Barth syndrome, a rare and relatively unknown genetically linked cardiac disease, can cause dilated cardiomyopathy. This syndrome affects male children, usually during their first year of life. It can also be diagnosed later. In these young patients the heart condition is often associated with changes in the skeletal muscles, short stature and an increased likelihood of catching bacterial infections. They also have neutropenia, which is a decrease in the number of white blood cells known as neutrophils. There are clinical signs of the cardiomyopathy in the newborn child or within the first months of life. These children also have metabolic and mitochondrial abnormalities.

A person with cardiomyopathy may suffer an embolus before any other symptom of cardiomyopathy appears. That's why anti-clotting (anticoagulant) drug therapy may be needed. Arrhythmias may require antiarrhythmic drugs. Therapy for dilated cardiomyopathy is often aimed at treating the underlying cause, however. If the person is young and otherwise healthy, and if the disease gets worse, a heart transplant may be considered.

When cardiomyopathy results in a significantly enlarged heart, the mitral and tricuspid valves may not be able to close properly, resulting in murmurs. Blood pressure may increase because of increased sympathetic nerve activity. These nerves can also cause arteries to narrow. This mimics hypertensive heart disease (high blood pressure). That's why some people have high blood pressure readings. Because the blood pressure determines the heart's workload and oxygen needs, one treatment approach is to use vasodilators (drugs that "relax" the arteries). They lower blood pressure and the left ventricle's workload.

In hypertrophic cardiomyopathy, mass of the left ventricle enlarges or "hypertrophies. In one form of the disease, the wall (septum) between the two ventricles (pumping chamber)

becomes enlarged and obstructs the blood flow from the left ventricle. The syndrome is known as hypertrophic obstructive cardiomyopathy (H.O.C.M.) or asymmetric septal hypertrophy (A.S.H.). It's also called idiopathic hypertrophic subaortic stenosis (I.H.S.S.).

Besides obstructing blood flow, the thickened wall sometimes distorts one leaflet of the mitral valve, causing it to leak. Hypertrophic cardiomyopathy is the most common inherited heart defect, occurring in one of 500 individuals. Close blood relatives (parents, children or siblings) of such persons often have enlarged septums, although they may have no symptoms. This disease is most common in young adults.

In the other form of the disease, non-obstructive hypertrophic cardiomyopathy, the enlarged muscle doesn't obstruct blood flow. The symptoms of hypertrophic cardiomyopathy include shortness of breath on exertion, dizziness, fainting and angina pectoris. (Angina is chest pain or discomfort caused by reduced blood supply to the heart muscle.) Some people have cardiac arrhythmias. These are abnormal heart rhythms that in some cases can lead to sudden death. Often an implanted cardioverter defibrillator (ICD) is needed to shock the heart to restart a normal heart rhythm and prevent sudden death. The obstruction to blood flow from the left ventricle increases the ventricle's work, and a heart murmur may be heard.

The usual treatment involves taking a drug known as a beta blocker (such as propranolol) or a calcium channel blocker. If a person has an arrhythmia, an antiarrhythmic drug may also be used. Surgical treatment of the obstructive form is possible in some cases if the drug treatment fails.

Alcohol ablation is a type of nonsurgical treatment for hypertrophic obstructive cardiomyopathy. It involves injecting alcohol down a small branch of one of the heart arteries to deaden the extra heart muscle. This allows the extra heart muscle to thin out without having to cut it out surgically.

This is the least common type of cardiomyopathy in the United States is restrictive. The myocardium (heart muscle) of the ventricles becomes excessively "rigid," so it's harder for the ventricles to fill with blood between heartbeats. A person with restrictive cardiomyopathy often complains of being tired, may have swollen hands and feet, and may have difficulty breathing on exertion. This type of cardiomyopathy is usually seen in the elderly and may be due to another disease process.

Some people who develop cardiomyopathy have no signs and symptoms during the early stages of the disease. But as the condition advances, signs and symptoms usually appear. Cardiomyopathy symptoms may include: shortness of breath with exertion or even at rest, swelling of the legs, ankles and feet, bloating of the abdomen due to fluid buildup, fatigue, irregular heartbeats that feel rapid, pounding or fluttering, dizziness, lightheadedness and faintin*g*.

No matter what type of cardiomyopathy you have, signs and symptoms tend to get worse unless treated. In certain people this worsening happens quickly, while in others it may not happen for a long time. Because the disease is also sometimes hereditary, your doctor may also advise that your family members be screened for the disease as well.

References

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